Earth Science

Rockhounds' NATIONAL Magazine

"Dahomey Girl." (See page 16.)

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EDITOR'S MEMO PAD

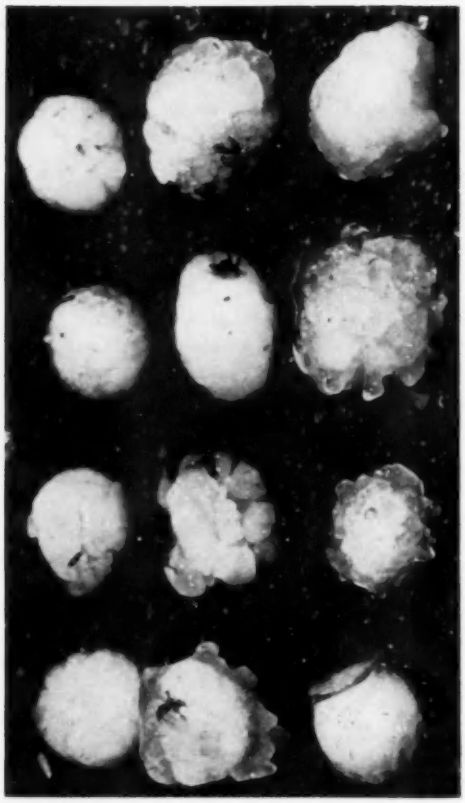
SUPERLATIVES are something that editors try, or at least should try, to avoid. They usually get one into trouble. When one speaks of the longest bridge or tunnel, or the highest building or dam, or the best homemade pie or cake, he may be sure that in this progressive age, some one will soon come along with a longer, higher, or better, "this or that."

Speaking of earth science conventions, however, we may be sure that no one will ever dispute the fact that the recent Midwest-American Convention held in July at the Minnesota State Fair grounds in St. Paul was actually "tops," in almost every detail. Here one found the best of everything that is to be expected at a gathering such as this, and the officers, committee chairmen, and other workers who put it over are all to be most highly congratulated upon the outstanding success of this event.

On this occasion the Minnesota Mineral Club functioned as host society to the 16th Annual Convention of the Midwest Federation, which was in turn host to the 9th Annual Convention of the American Federation of Mineralogical Societies. Visitors who attended from almost every section of the country were all delighted, and warm in their praise of the splendid hospitality accorded them by the host society, and the State Fair officials, as well as with the fine variety and quality of the material shown by both society and individual exhibitors. The quality of the dealers' stock for sale also was excellent, and many visitors were able to pick up, at reasonable prices, materials for which they had long been searching.

No finer place could have been selected for a convention such as this, and the ample facilities of the State Fair grounds for parking, camping and visiting were certainly ideal. The entire space of the huge Educational Building, with more than a thousand lineal feet of permanent glass fronted wall cases, was occupied by magnificent exhibits, valued at more than three quarters of a million dollars. Here were displayed the finest treasures of over 250 individual exhibitors, 14 club displays, besides many other very worthwhile educational and industrial exhibits. One might stand for hours at a time in front of these cases and drool over exquisite gems of all types; beautiful mineral and crystal displays; excellent fossil exhibits; carvings; spheres; polished specimens; Indian artifacts; rough gem stones, and "what have you." A. G. Parser, of New York, alone had on display over $50,000 worth of diamonds in the rough.

Even the sun came out of hiding for the convention, and the Minnesota weather upheld its reputation. An estimated number of more than 40,000 guests visited the ex-



WHATISIT? Yes! These are nuggets of our most important mineral. (See page 15.)

hibits during the four days of the show, many being young folks and children, some of whom will become future rockhounds as a result of the interest engendered by their thrill on seeing such a wonderful display of beauty.

All who missed this great show will surely regret it, and with this in mind we are writing a glowing account, believing that it is not too early to begin urging members of each Federation to start making plans now to attend their own regional Federation's convention wherever and whenever held, as it surely gives all a big build-up insofar as their hobby is concerned.

* * *

CONVENTION HIGH LIGHTS

ONE OF THE OUTSTANDING FEATURES of the show was the free bus trips afforded visitors by the convention management, the most favorite being the one to the world-famous collection of 17th, 18th, and 19th century Chinese jade on display at the Walker Art Center in Minneapolis. This collection, consisting of more than 200 pieces of priceless art, is one of the finest in the country and was begun about 1900 by the late Thomas Barlow Walker. It was exhibited in its entirety for the benefit of convention visitors for the first time in a number of years.

"ONYX DINNER SET STOPS THE SHOW," was the headline in the *St. Paul Dispatch* which went on to describe in detail the 147-piece dinner set made of Death Valley onyx by Mr. and Mrs. Walt Pilkington of Victorville, California. Mr. Pilkington mined the onyx with his own hands in the barren wastes of Death Valley and transported it by burro and four-wheel drive truck to his workshop.

"I mined the blocks from the face of a mountain," he said. "I looked for a pleasant pattern and a section free of fractures." After mounting the blocks on a potter's wheel, he used silicon carbide tools for hand-finishing. Included in the set are candlesticks (the hardest items to make), 10 lamp bases, some onyx lamp shades, and bowls, platters and the customary other dinner pieces. No items are pieced or glued.

AS USUAL the marvelous display of hand polished spheres, exhibited on two large artistic iron trees, by gentleman rancher Paul A. Broste, of Parshall, North Dakota, attracted a large share of attention. Out of a total of 400 spheres in his collection, all made by Mr. Broste, 85 of his choicest were displayed on one tree, and 115 on the other. The largest sphere exhibited was made of Colorado jewel marble and weighed approximately 100 pounds. Each sphere represents many hours of tedious painstaking labor, but in spite of his 69 years, he manages to work on his grain farm, to paint, and to do "some serious thinking on nature." He is also an author and has published a book of his own poems and data on his hobby.

BEST EXHIBIT OF THE SHOW award was given by unanimous decision of the judges to Joseph and Betty Phetteplace, of Wauzeka, Wisconsin, who exhibited their famous "Man O' War," mosaic done in Pietre Dure. No one who has ever seen this exquisite work of art would for a moment question the validity of this award. The premier showing of this famous mosaic was made at the 1955 convention of the Midwest Federation held in Detroit. Made of more than 1,000 pieces of closely fit semi-precious stones, about 2,100 hours of work, over a period of eight months' time, went into the production of this intricate work of art. We congratulate these "swell people" upon this splendid recognition.

THE WOODRUFF TROPHY, the highest award of the American Federation made for the finest mineral display of the show, was given to Mrs. Dorothy Craig, of the Southwest Mineralogists of Los Angeles, California. This was certainly a fine display and it was truly wonderful of her to bring it all the way from southern Califor-

nia. Dorothy, who is past president of the American Federation, and certainly one of the best known women in the entire mineral fraternity, has done much towards directing the policy of the Federation and making it the success it is. Mr. and Mrs. Craig have the unique distinction of having attended every convention of the American and the California Federations and it is always a great pleasure to see them. No one could be more deserving of this honor.

THE BEST CLUB EXHIBIT TROPHY was awarded to the Earth Science Club of Northern Illinois, better known to Federation members as ESCONI. This fine club, which is one of the largest and most active of any of the clubs in the country, has more than 350 members, and is highly departmentalized, having regular functioning sections for paleontology, for archaelogy, and for juniors, as well as sponsoring evening school classes in adult education. Although located nearly 500 miles from the site of the convention, they had some 47 members for a record number in attendance.

ONE OF THE FINEST EXHIBITS of the show was prepared by the Rochester (Minnesota) Earth Science Society, fifteen members taking part in the display. The mineral collection of Mr. and Mrs. Harold Whiting, a part of this exhibit, was awarded the "blue ribbon" as being the best mineral collection present. "It was the first time that we entered a display where prizes were offered," said Mr. Whiting, who had charge of designing the arrangement of their entire club exhibit. Five weeks were spent in its preparation.

ONE OF THE MOST OUTSTANDING and extraordinary displays at the convention was that of the National Museum (Smithsonian) from Washington, D.C., which was obtained by courtesy of Dr. James H. Benn, chief curator of geology at the museum. Dr. Benn's presence lent prestige to the show, and all who made his acquaintance found him to be one who enjoyed mingling and conversing with the ordinary rockhound, as much as they enjoyed talking with him. On display in the Museum exhibit was the famous Coronation Necklace, designed in three shades of antique gold and containing one star ruby of 82.92 carats (the fourth largest in the world), two star rubies of 15 carats, and 86 diamonds. Something to behold.

THE PETRIFIED WOOD COLLECTION of H. L. Straight of Adel, Iowa, one of the finest in the entire country, attracted much attention. It deserved a blue ribbon, but did not receive one due to the fact that no provision had been made in the program for judging this classification. The collection, weighing over 500 pounds, containing more than forty species, consisted of natural sections, polished slabs, book ends, et cetera, and will long be remembered, not only for its great beauty, but also for its educational value.

SOMETHING NEW has entered the picture. After weighing the matter very carefully the council of the American Federation, in their business session, endorsed the advertising campaign of General Mills to promote the collecting of minerals among users of "Wheaties," by offering minerals as a series of premiums. It was agreed that the plan held high potentialities for interesting vast numbers of children in the collection and study of minerals, many of whom might later become devotees of our hobby, by thus creating their interest while yet in the formative period of life. This also would make a substantial addition to the number who would later become students of geology, which as a science study now stands numerically, at least, at the bottom of the list. It was agreed that the benefits derived from such a project would far offset any criticism of the precedent of endorsing a commercial project.

THE PRESENCE at the convention of Frank J. Sadilek, of Des Moines, Iowa, who is editor of our Federation sponsored *Trade—Wins* bulletin was indeed gratifying to all of his many friends. Frank in

his quiet, unassuming way is performing a real service not only to Federation members, but also to many rockhounds widely scattered over the entire country. This, as the name would indicate, is a trader's bulletin edited in such a unique and quaint way that all who are on the mailing list look forward to receiving it with keen anticipation. Anyone who has a thin dime to spare can get his name on the list by sending it to the editor at 1308 W. 42nd St., Des Moines 11, Iowa. After you have your copy and like it, you can subscribe in larger doses. The bulletin is published on a less than cost basis, as Frank performs this service for the love of his fellow rockhounds and the fun he gets out of it.

FOR THOSE who do long range planning ahead, we are very happy to announce that the 1957 convention of the American Federation will be held in Denver next June, with the Colorado Mineral Society as hosts to both the American and the Rocky Mountain Federations. All those who attended the first real convention of the American, after its organization, held in Denver, will remember how graciously they were entertained and what a good time was had by all. It is time now to start making plans immediately for this grand conclave. What a place for a convention! Denver really has everything that it takes, and will make use of it. The 1958 convention of the American will be held in southern California.

AFTER EVERY CONVENTION we always hear the question, "where do we go next year?" As for the 1957 Midwest convention, as was agreed at our council meeting held in Detroit last year, our next conclave will be a field (trip) convention, and our headquarters is to be at Plattesville, Wisconsin, in the heart of the highly mineralized area of the tri-state region of Wisconsin, Illinois and Iowa, with plenty of basic geology thrown in for good measure.

Events will center about the Wisconsin College of Technology, (formerly the School of Mines), and the official host society will be the Madison Mineral Society, of which our Federation president, Mrs. Charles E. Hemingway, is president also. Start planning now for your trip to Plattesville next year, as it promises to be a week of real fun, with some good geologic education, field trips and lectures thrown in. On these field trip conventions, which are planned for every third year, we really "let our hair down."

THE EDITORS' (BULLETIN) BREAKFAST meeting on July 14 was undoubtedly one of the "highlights" of the convention. It was attended by forty-eight amateurs and two professionals, with clubs represented across the nation from California to Washington, D.C. Serving as toast-mistress was Mrs. Vivienne Dosse, of Fontana, California who, also sponsors the National Association of Mineral Club Bulletin Editors. Mrs. Dosse is performing a splendid function in behalf of the club editors, which is very much appreciated by all. Following the breakfast a serious panel discussion took place, which was both dignified and helpful. At the close of the meeting Russell MacFall, author of "Gem Hunter's Guide" and night editor of the *Chicago Tribune*, spoke some very encouraging words to the group, and his advice if taken should bear fruit in the improvement of our club bulletins.

THE BANQUET, held Saturday evening, July 14, at the Fiesta Room in the Lowery Hotel, was a fitting climax to the convention. Much credit should go to Doris Erickson and her committee for the beautiful appointments and success of this occasion. Leone Knox was the mistress of ceremonies, and in her own inimitable style took charge of the informal program. If we may quote Leone: "We know we will miss looking *forward* to this convention, even though looking *back* on it we will recall many pleasures. You, our friends, thank you for coming. Seeing you again was a joy. Meeting new friends is

always a thrill, and your rocks are beautiful. But rocks are only a means to an end, and that end is the friendship we make and keep. We shall look forward to meeting you at the next—or the next—or the next convention."

Following the banquet, the party attended the "Pops" concert and Ice-Capades at the Saint Paul Auditorium, which in the way of entertainment was certainly "tops." The show of the evening was sponsored by the American and Midwest Federation, whose members were there as honored guests.

IN CLOSING we shall say that "nothing succeeds like success," and thanks to D. A. Thomas and his committee chairmen and workers, this 1956 convention and show were a wonderful SUCCESS.

* * *

LETTERS

2238 E. McDowell Rd.,
Phoenix, Arizona,
June 25, 1956

DEAR DR. WILSON:

"Beauty From The Earth" will be the theme of a fascinating article with color photographs in the November issue of *Arizona Highways Magazine*. The article was written by Arthur L. Flagg of Phoenix, expert mineralogist and mining engineer for over 50 years, and known affectionately by thousands of mineral collectors over the nation as "Mr. Rockhound". The photographs were taken by Floyd Getsinger, veteran photographer of Phoenix, who will also have an article in the same issue explaining how to photograph minerals.

Collectors who want this spectacular issue for their library should get their orders in early as it will be out about the middle of October. Address Arizona Highways Magazine, Highway Department, Phoenix, Arizona.

The article will cover valuable details about collecting, and will explain numerous interesting facts about the beauty of earth's minerals. Getsinger, who has captured this beauty in color photography, will share his trade secrets.

Sincerely,
IDA SMITH, Cor. Secy., MSOA

*

Dillingham, Alaska,
July 18, 1956.

DEAR MR. WILSON:

Not long ago I returned from a collecting trip along the Bering Sea littoral between Cape Newenham, latitude 58-30, and the Askinuk Mountains, latitude 62.

Happened that I was in Bethel on the Kuskokwim River when that busy burg had their 4th of July program. Many visitors in town, mostly Eskimos from homes as far away as St. Michael, north of the Yukon Delta, and Cape Avinof, at the mouth of Kuskokwim Bay. Saw many old friends that I had not seen for 10 and even 20 years. As I was one of the few white men who traveled that area by dog team, kyack and gas boat during the years before and subsequent to World War I, they all "membered" me. Sometimes I had to stall around quite a few moments before I could place these friendly folk. It was such a comfort to know that these men and women, and grown up boys and girls, really cherished their memories of old.

My trip was fairly successful, especially in getting artifacts that have become scarce the past decade or more. Notable were six really old "Ivory Yagwin" (story telling knives). Two of these were sold right in Bethel to an Alaskan collector. Of the other two I plan to have a photograph made in Anchorage, send a copy to Mr. Barbie, president of the Swiss "Institut for Ethnolgie" and let him select the two he requested some time ago.

To me the most interesting rock secured was a matrix of Albite containing very large crystals of dark green Hornblende and a few smaller crystals of a light green Epudote. These with the co-operation of the Goodnews Bay Mining Company were found on their tailing dumps from placer operations on Squirrel Creek, tributary of Salmon River, Kuskokwim Bay. Will not advertise these till I'm sure they have been safely delivered to Oakville, Washington, where I will be after August 30.

I am enclosing a classified ad for the September-October issue of EARTH SCIENCE.

Have secured some really fine platinum nuggets. With the apparently steadily rising price of Platinum, I consider them an investment as well as one more thing of rarity and beauty to grace private and public collections.

Your kindly and worthwhile suggestion of an outline map of Alaska to accompany a future assortment of reasonably priced Alaskan minerals, I shall be happy to have you mimeograph, especially if two or more meridians and two or more parallels could be drawn and numbered at top and side of outline.

The May-June issue very interesting. Further success. Regards.

Sincerely,
FRANK H. WASKEY

* * *

AUTHORS

GUS BROWN writes from Des Moines, Iowa, where Mr. and Mrs. Brown are enthusiastic members of the Lapidary Society, wherein the new V-Lock method he describes for mounting gem stones was developed. Their address is 819 Twelfth St. Pl., Des Moines 14. . . . DR. CLAUDE H. BARLOW, retired physician of Trumansburg, New York, is an active lapidary. . . . KENNETH ROBERTS, of Kennebunkport, Maine, is the fam-

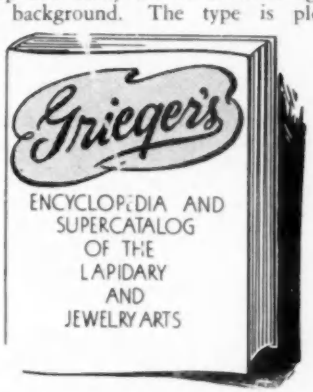
ous author of "Northwest Passage" and other notable historical novels. A recent issue of *Collier's* has his account of the battle of Cowpens, South Carolina, in the Revolutionary War, and makes editorial reference to his interest in rhabdomancy, which is evidenced in this issue of EARTH SCIENCE as it was in the last. . . . ROBERT E. RIECKER, of Boulder, Colorado, presents an abridgement of his paper recently written at the University of Colorado. (Photography by Richard M. Pearl, drawings by the author.)

—BEN HUR WILSON, *Editor*

BOOK REVIEW

GRIEGER'S, INC. ENCYCLOPEDIA AND SUPER-CATALOG OF THE LAPIDARY AND JEWELRY ARTS, 25th (Silver) Anniversary Edition, deluxe bound edition $2.50. Paper bound edition $1.50.

Grieger's have done it again. This new Encyclopedia and Super-Catalog of the Lapidary and Jewelry Arts, just off the press is the 25th (Silver) Anniversary Edition. They have the knowhow and have put it into this volume. This is well-designed and organized, beautifully illustrated, and a product of the bookmakers' art that even the printer must be proud of. The printing is clear, the innumerable illustrations are sharp and many are in color or against a colored background. The type is pleasantly



readable and the make-up well balanced. The paper is substantial and of good quality.

Within the pages of this book are listed just about all the objects and articles that any lapidary jewelry artist, or collector could wish for. This is undoubtedly the most complete Catalog Grieger's have ever produced.

There is a valuable page on "How to find things in this Catalog," and a complete index, both thoughtful and valuable time savers for the customer. The descriptions of the items offered are clear and to the point, always identified with stock numbers. The section on Jewelry parts is perhaps the largest and most complete. Other sections offer Machinery and Equipment, Supplies like Abrasives, and Powders, Rough Gem Materials, Slabs, Tumble Polished or Baroque Gems, Tools, Books, Facet cut Gems, and Cabochon Gems.

There are also numerous discussions by experts in their fields on such subjects as Jewelry Setting, Making a Belt Buckle, Silver Soldering, Jewelry Making at Home, Chain Making, Jewelry Enameling, Uranium Minerals, How to Use Diamond Saw Blades, How to Prevent and Correct Lapidary Troubles, The Fluorescent Story, Identifying Minerals, Rock Determination, Guide to Stone Guages and Sizes, The Sanding Process, Grinding Flat Surfaces, Polishing Powders and Buffs, and a large series of fine photographic reproductions of the establishment of Grieger's Inc., showing the wares and the people who make up this great Catalog.

This book is more than just a Catalog; it is a source of much valuable information for amateurs, craftsmen, dealers and professionals.—J.D.W.

LOOKING AHEAD

Rockhound hobbyists should look forward to the coming of the 12th International Nature Photography Exhibition to be held in Chicago, next February 2-24, at the Chicago Natural History Museum, where they will have the opportunity to enter their choicest pictures and slides in competition with others from all parts of the country.

Entry blank forms may be obtained from Willard Farr, 6024 Dakin St., Chicago 34, Illinois, and medal and ribbon awards will be given. Entry deadline is January 19, 1957.

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Grieger's

EXCITING News

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SEPTEMBER-OCTOBER, 1956 Vol. 9, No. 5

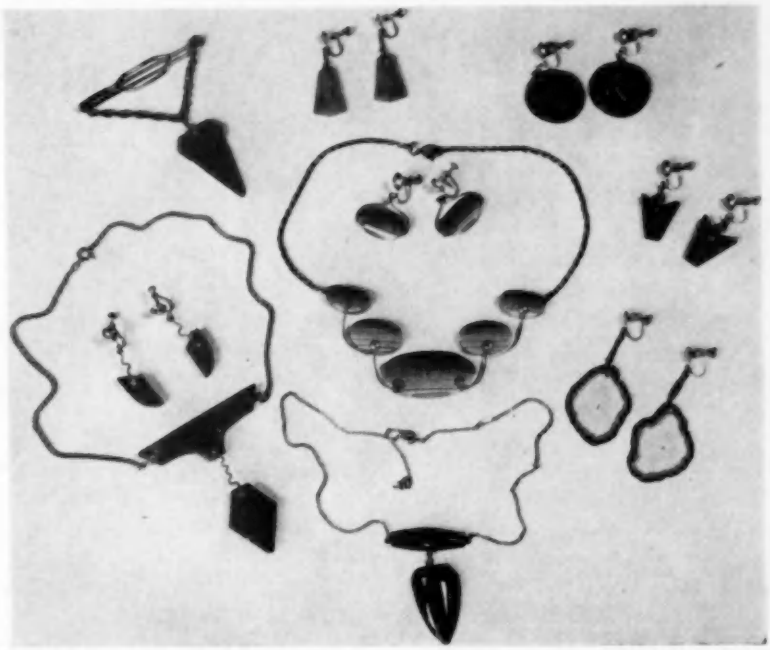
Rockhounding with the V-Lock

by GUS BROWN

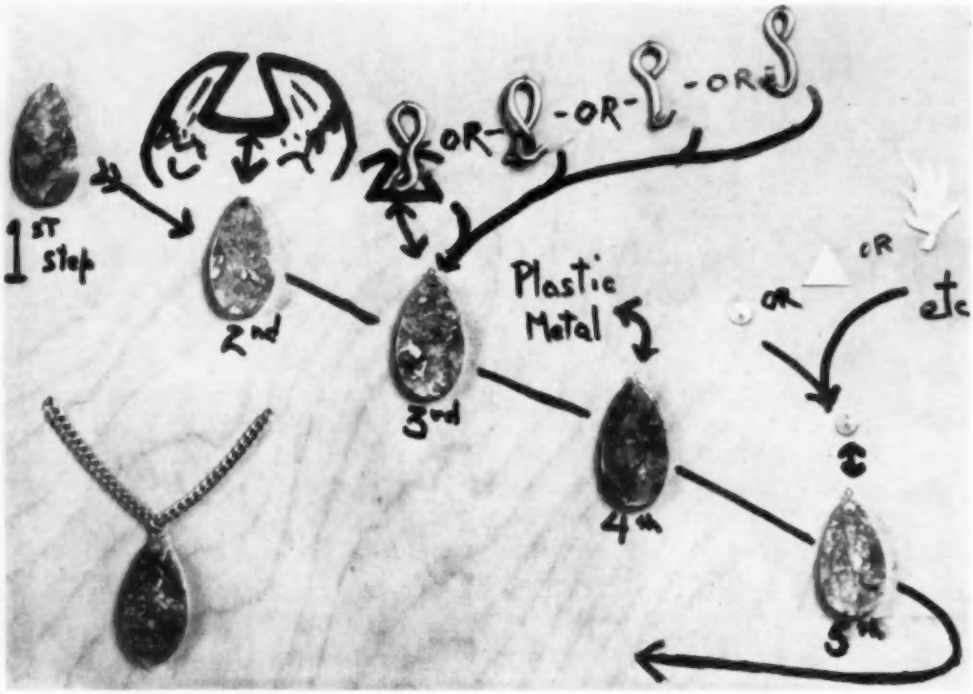
FRIENDSHIPS quickly and enthusiastically formed and long lasting, excitement and travel, the exchange of information, the giving of help, the awakening to new wonders and natural beauties of the earth which are constantly being unveiled, the reconnaissance of the geologic sciences, the many opportunities to practice the golden rule, the spirit and the pleasure of giving and the doing of good things together—this is the hobby all of us, including my wife and I, call rockhounding.

As a hobby it has unlimited opportunities to develop specialties and to individualize our interests and yet be tied and bound together by the common love and appreciation of the rock, by the story it can tell or by the permanent beauty it holds within it.

To bring out for appreciation the true beauty of the stone by cutting and polishing is today perhaps the most popular phase of rockhounding and it includes the fastest growing facets of our hobby by its most active participants. Constantly new, better and easier methods are being developed to



"A few pieces of jewelry made by the author and his wife, all made with the V-Lock."



"The very simple key to the V-Lock is seen in the drawing above the 2nd step."

cut and polish stones and to display them as personal gems and as items of decorative use.

Within the framework of the Des Moines Lapidary Society we have recently developed a new method of mounting gem stones. We call it the V-Lock Mounting. It has special advantages and many new uses. It is permanent — takes only minutes to prepare, requires no heat, no bezels, no drilling and does not depend upon glue.

Please note, however, that it is not a cure all. It will not replace or make obsolete any of the mounting methods now in use. Rather it is an additional method and with it new exciting original designs may be created by you, especially in the realms of free forms and flat forms.

But first the V-Lock method itself. Figure 1 is a chart showing the step by step method of making a one stone necklace. Study it as you read the following:

Step 1. The stone: A slab is cut into a flat form or low cut cabachon and polished.

Step 2. The cut: Using a trim saw an inverted V is cut about 4 mm. into the stone at an appropriate point. At the widest point in the stone the cut usually measures 2½ or 3 mm. At its narrowest point in the stone about 1 mm. or enough for a 20 gauge wire to slide through. Now take a good look at the drawing above the second step in figure 1.

Step 3. The link: Take a piece of 20 gauge wire, make a loop (to be used later for a jump ring or bail) and then starting 1 or 2 mm. below the loop make any kind of a knot, half knot or twist in the wire. You can see four examples in the chart above the third step. Twist or shape the knotted end of the link so that it fits comfortably into the V cut with the shank of the wire passing through the narrow shoulder of the stone and with the loop exposed. Cover the cut with your fingers, grasp the loop and test by twisting and pulling. You should be unable to pull the wire out even with more than reasonable strength. If the

wire does pull out, reshape or make a new link.

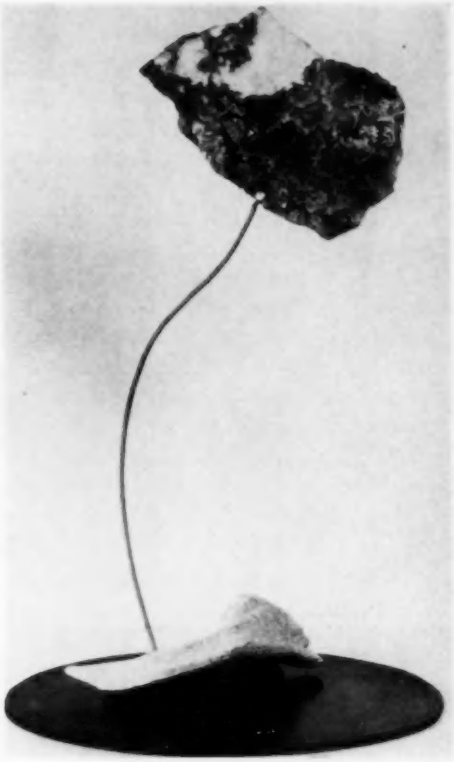
Step 4. The plastic metal: Fill the cut-out area in the stone with plastic metal. Dip the knotted end of the stone with the exposed loop parallel to or at right angles to the flat surface of the stone. Wipe off part of the excess metal. Avoid pits or holes in the remainder. Add more metal if necessary.

Step 5. Finishing: Let stand overnight or longer for the metal to harden (and the waiting is such a nice way to develop the esoteric art of reflection and contemplation!). Now scrape or cut off the excess metal with a single edge razor blade or similar sharp tool. Polish the exposed metal to a silvery white mirror finish, using tripoli wax and jeweler's wax rouge. Or if you wish you can cut a decorative design out of thin metal sheet or use wire to make curls or ringlets and cement over the cut and stone. See chart figure 1, fifth step.

You are now ready to attach the gem stone to the chain with a jump ring or bail and your necklace is finished.

Here are some additional points:

"The leaves are made of Virginia unakite. The buds and flowers from California jasper. The construction is 16 inches high."



"This 9½ inch slab of Utah agate weighs 15¾ oz. and is supported 20 inches above the base."

1. We usually make the V cut after the stone is cut and polished but it may be done earlier.

2. At the widest part of the V cut there should be at least 2 mm. of stone remaining. This applies to solid agate and jade. More brittle stones may require 3 or more mm.

3. We have found that a 4 inch standard .025 thickness diamond blade such as made by Congo is ideal. Thinner blades are not satisfactory. Thicker blades make too large a cut for jewelry.

4. A trim saw in which the plane of the platform is on dead center rather than above the shaft is best, so that the V cut is the same size on both sides of the flat form or cabachon. A removable tilted or wedge-shaped platform could be superimposed on your machine to give you the

preferable cutting angle if you have the more common type equipment.

5. The plastic metal we use is called Parko Miracle Metal 70/30 cold process made by the Park Chemical Co. of Detroit, Michigan. It is a synthetic metal alloy in putty form. Dries harder than lead and it will adhere to almost anything including the skin on your fingers. It is used by automobile body repair men to fill dents in cars, etc., and presumably it may be obtained from them or their supplier. There may be other brands available. We apply it with a toothpick. You will need some of the special solvent also. The metal has volatile ingredients and is inflammable. Available in 1 lb. cans which cost less than $2.00, enough to mount perhaps 5,000 stones.

6. The decorative design we use, to cover the cut, is made from plain or knurled thin sheets and round disks and are punched out with a Whitney 5 Jr. punch. Other and more attractive designs are, of course, possible with sheet metal, wire or balls.

The V-Lock mounting method is particularly useful for stones shaped from slabs and as free forms or in geometric flat shaped designs — useful for the free and dangled type of jewelry. It could conceivably be used for baroques if the stone has a large flat surface to rest upon the table of the trim saw during the V cut step or if the baroque is first embedded in plaster of Paris to give it a temporary flat base. Again, make sure that where you decide to make the V cut into the stone is such that you will have enough stone left. Thus it would not be a suitable method to try on a sharply pointed end.

On many an occasion this method may be used with some esthetic and practical advantages over the bell caps and glue method and may often be used instead of drilling holes. We have been using this method for two years and have mounted perhaps a thousand stones up to about 3 inches in diameter. There have been no

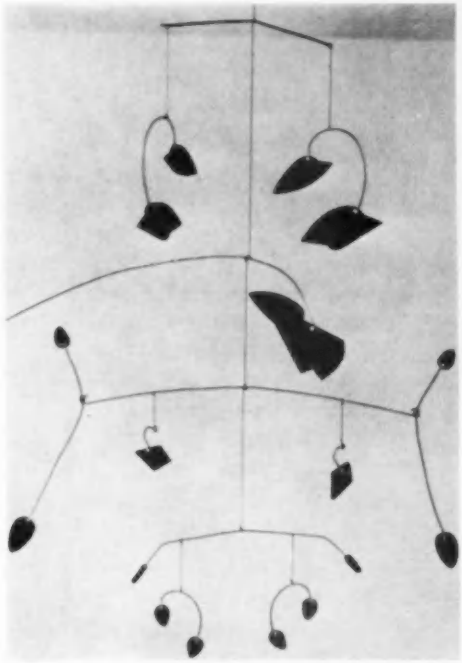
"A 20 inch high construction made from yellow and rich brown jasper from Parksfield, California."

failures except in two or three early attempts when we did not place enough of a bend in the embedded end of the link. In tests using pliers and heavy yanks and pulls until something gave way, either the stone or the wire would break leaving the V-Lock intact.

For slabs larger than 3 or 4 inches we are now experimenting with the use of caulk model alloy and mercury amalgam — if we have any good luck we will let you know. A dentist and a going-to-be rockhound made the suggestion.

So much for the method. After you have made one or two you will find it is simple and fun and that it will take you only two or three minutes total time — the disadvantage of the necessity of waiting for the plastic metal to set is usually not great.

And now for the exciting part of this method. One day recently we wondered what would happen if, when shaping the wire for the link, we made the twist first. We tried it and lo and behold here is a gem stone mounted firmly on the end of a piece



"A 2-foot mobile made from Mahogany Obsidian. The largest stone is 4½ inches long. With the V-Lock method stones may be supported in any position."

of wire. How about attaching another stone on the other end of the wire? How about making two V cuts in one stone? How about bending and shaping the wire—or thicker wire with the end filed to fit the V cut? Or have the wire frame the stone?

How about making a mobile, a stabile, wall decorations, table decorations? How about making floral designs and have them seemingly just float in the air? Why not a larger cut and heavier wire, and suspend a 9-inch polished slab of rock 1½ feet above a television cabinet? Keep the wire straight or give it a nice graceful curve. How about trying a group of stones together in a pleasant design and suspending them in a picture frame?

Take a real good look at the photographs — study them awhile and perhaps you too will see all kinds of new designs — original designs, happy-fun-to-make new creations. It will bring new beauty into your rock room and into your living room — new talking pieces of jewelry. Matched pieces of jewelry are nothing new, but how about earrings, necklace and a wall or table decoration to watch! Rockhounds, let's get going. If you have any questions, suggestions or comments send them along. (819 Twelfth St. Place, Des Moines 14, Iowa.)

The V-Lock mounting method is one result of a project of the Des Moines Lapidary Society in which just about all members contributed at least something or some part or some suggestion. But, in particular, I want to give credit to Paul Caster, 2729 Payne Rd., for his photographic work—to Dan Finch, 3005 2nd. Ave., for constructive suggestions — to Roy Bennett, 924 Loomis, who helped in machining — to Warren Fulton, 150 E. Douglas, who suggested the punch, and to Dency, my much better half, who kept us all hopping and encouraged.

WHATISIT

Whatisit? Yes! These (see page 4) are actually samples of our most important mineral in nugget form. You perhaps may have already guessed their name, or recognized their identity. They are one of the solid forms of water, or ice, commonly called hailstones, with which we are all more or less familiar,—some of us even too familiar. These particular ones, which were about the size of baseballs, fell from the sky at Muskegon, Michigan, on May 13, 1956, doing damage to buildings and automobiles to the extent of several million dollars.

No one can say that water is not a mineral, being a substance of natural origin having definite chemical composition, H_2O, nor that it is not important. In fact, it is of utmost importance, since it covers more than two-thirds of the earth's surface, and in quantity amounting to nearly four hundred million cubic miles.

Truly, no other mineral substance is as important or as indispensible as water, or has such marvelous properties,—so many, indeed, that whole volumes have been written upon this subject. It is not only very important as a mineral, but also as a geologic agent. As a mineral, it crystallizes in disk-like hexagonal patterns, as snow flakes, which are of exquisite beauty and innumerable designs.

As hailstones, it is merely nuggets, for the moment, falling down from the sky like meteorites, to exist only momentarily, and then melt away again into nothingness and a memory.—B.H.W.

Bizarre Forms of the Eastern Sahara

by Dr. Claude H. Barlow

On the rolling hills of the Valley Gindali and the Wadi Yahmum, Egypt at an altitude of from 500 to 1200 feet one finds strange and sometimes amusing or delightfully beautiful forms of stones. (Wadi means valley.)

During a period of over twenty years residence in Egypt, I often visited this area of the Eastern Sahara. (Sahara is the Arabic word meaning desert.) Like all true rockhounds, I collected minerals, sand, fossils, petrified wood and other items of interest. Occasionally one would come across a queerly-shaped stone which attracted attention and would add it to his store.

There is no dune or surface sand in this region but the desert floor is largely gravelly sandstone and limestone with loose pebbles exposed on the surface. It is amongst these pebbles that bizarre forms are found. From a study of these forms it is evident that they are sand-eroded or water-worn nuclei of larger nodules. From fossils found in them or on their surfaces, their age can be determined. They belong to the Lower Eocene or Upper Oligocene.

In composition they are as varied as the rocks of the region: limestone, chert, schist, chalcedony, flint, crystalline quartz, selenite, jasper and an occasional agate. Sodium chloride crystals are also found and rarely sulphur. There is an extensive area of petrified forest in the locality.

The bizarre forms are sedimentary silicon pebbles which originated in cavities formed in mud by escaping gases from organic matter on the ocean floor. There have been two or perhaps three subsidences of all of this region in the geological past and heat and pressure solidified these rocks to a hardness of 6 to 7 Moh's scale.

One finds many spherical forms which represent the inner core of larger nodules which have been eroded by water till the outer, softer stone has been worn away. Sectioning these spheres sometimes gives colorful and delightful banding but a large proportion of them are chalcedony, flint or chert of fairly uniform texture or only a hint of banding.

On a larger scale the "water melon" spheres in the Eocene limestone of the Wadi Shetun on the Western Sahara are

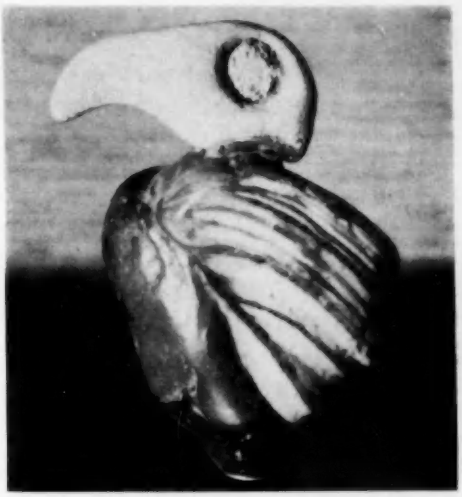
Old Witch

like the spheres which I have collected on the Eastern desert and which I have for sale. Perhaps some of these little spheres once formed the cores of the big ones like those of Wadi Batich, the "Melon Country," which after eons of tumbling have been reduced to their present size. (Batich means watermelon.) The same is true of the bizarre forms which I have collected from amongst the other pebbles which form a continuous layer over the low, rolling hills of the Wadis Iss Dud, Gindali, and Ti.

But bizarre forms are not the only thing I collected as I bent more than double, walking slowly for hours on the ground. At the end of a perfect day I have found that I was the possessor of the most outrageous backaches to be found on any desert.

At the time these bizarre forms received their tumbling, they lay in stream beds of which the wadis are the dead survivors. These wadis or dry streams run off from divides which slope eastwards toward the Gulf of Suez or westwards toward the Valley of the Nile. Once they were full-flowing rivers running through fertile, forest covered plains. Of these forests there remain huge, petrified trees, over a hundred feet long, lying scattered in a windfall which occurred millions of years ago. These trees are mostly silk-cotton-fiber trees and conifers, with rarely a few palms.

When winter rains come these wadis show slender trickles of water which rapidly soak into the sand and are lost. But there are times when wild thunderstorms or cloudbursts over the high plateaus send raging torrents down the wadis, carrying everything before them and bringing destruction to villages on the irrigated plains below. I saw one such flood which did great damage to Ma'adi, a suburb of Cairo. The native adobe huts simply dissolved and became a part of the layer of mud out of which the population were, for months, digging their homes. The water came down the Wadi Ti and the Wadi Digla. In the Wadi Digla it formed a magnificent waterfall which lasted for four days. I got pictures of the falls. Fifteen years previously they had just such another waterfall. There was great movement of large and small stones and sand during the runoff.



Extinct Bird

It is impossible to give an adequate description of the erosion remnants, of originally large stones, which make up these strange and revealing forms because they are of such varying shapes, sizes and materials. One sees fossils, agatized snails which are semi-detached or completely free, nummulites, tiny bi-valves and most rarely the scale of a cyprinoid fish. Some show spheres in all stages of their erosion from their surrounding matrices. Some have beautifully-balanced, symmetrical shapes which defy the most imaginative origin. One thing is plainly evident, however, that these residual forms are of much harder rock than the base in which they lie. I have seen symmetrical designs weighing 30 to 40 pounds, while some of the spheres lying on the desert floor are too heavy to lift. One sometimes sees cylindrical potholes worn down into the sandstone wadi beds and in them spheres both large and small. After a wadi spate I have seen these cylindrical potholes still filled with muddy water. The spheres are more often oblate than perfectly spherical. One

sometimes finds a highly polished sphere no bigger than a BB-shot.

As these nodules are sedimentary, the theory most commonly held is that they were formed in one of two ways.

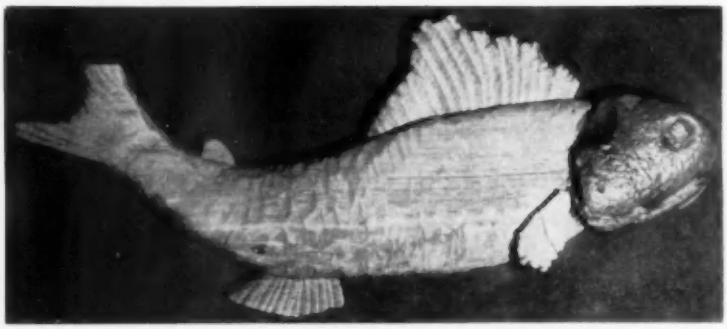
One: they are the result of silicon carried into amygdaloidal cavities by water which evaporates leaving successive layers of mud. This, when subjected to heat and pressure, crystallizes and hardens into nodules. In some the crystals are apparent, in others they are cryptic.

Two: they are formed by mud-flows or drips into depressions of harder sand or mud. These were overlaid by more sand. Pressures and heat produced the final hardening. Pressure between underlying and overlying layers of harder sand or mud produced squeeze forms which took odd and symmetrical shapes which are satisfyingly beautiful. Once solidified and exposed to surface conditions, they continued to harden.

While they were still in the soft mud state and water, charged with manganese, flowed in, the manganese precipitated as dendrites into the lighter mud. It is these dendrites which form such realistic trees and shrubs in the pictorial jaspers. Manganese is black and the colors, yellow, red, green and blue are produced by iron and copper in varying degrees of oxidation.

I have combined some of the bizarre forms into pleasing and amusing figures. To be fully appreciated they should be taken into the hand and viewed from all sides. Only in the fish have I combined wood and stone, but I had only the stone head of the fish and a fish without a body is fit only for a cat. A jackknife and a bit of cedar fence post did the trick. The head is a fine bit of erosion.

The body of the sitting bird is of chalcedony, the head of chert. In the body there is a symmetry which readily accounts for the upraised wings. The lower part is compact, the upper part is of wide layers which are not so densely overlaid with harder chalcedony. During its erosive carving, the stone sat in the sandstone or sand with its layered edge upward and its narrow edge presented to the prevailing wind. This wind is usually filled with fine quartz sand which is sharp enough to take the paint off your car clean down to the bright metal or to leave your skin bleeding after facing it too long. The stone was eroded away leaving the thin lines of dense chalcedony rampant. The head of the bird was formed in quite a different way. It is the tumbled remnant of a much larger nodule.



FISH HEAD (BODY CARVED CEDAR)

The old witch lives out on the wide blazing desert. In the head there is a close similarity of formation to that in the body of the sitting bird although there has been less oxidization than in the body of the bird. It has not lain exposed to sun and dew as long. Also the creases are not so deep, indicating a shorter wind-and-sand erosion. The body is stream worn.

In the Dahomey girl *(see front cover)* head and chest are two water worn nodules and the skirt is wind-and-sand eroded. But a word in further explanation of the skirt. This is a "Trikanter" of which there are many to be found between Abu Qitifa (Kitifa) and Abu Zenima on the Pliocene, Pleistocene and Recent plains of Sinai on the coast of the Gulf of Suez. Here there is much shifting sand and salty dew. The stones sit on the desert floor and the prevailing winds cut away the sand under them, leaving them on hard, salt-sand pedestals. The sand-filled, abrasive action of the prevailing wind cuts the rock on the side toward the wind as it stands elevated. Finally the pedestal breaks, the stone topples over onto its side and it again becomes salt-cemented into the sand, leaving another face exposed to the erosion of the wind. This, in turn, goes through the same process, leaving the stone triangular. A "Trikanter" is formed. If the stone is homogeneous in composition these trikanters look like Brazilnuts and the surface is either smooth or vermicularly grained. In case the stone is banded in hard and softer layers the surface is deeply cut as in the skirt of the Dahomey girl.

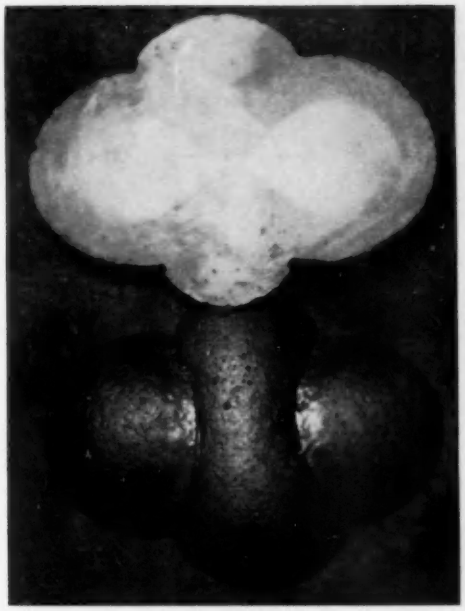


ILLUSTRATION 1

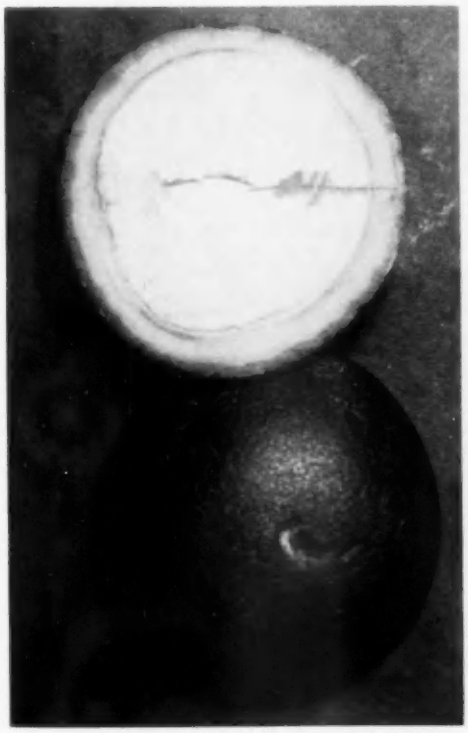


ILLUSTRATION 2

One could go on indefinitely describing these bizarre forms but an inspection of the illustrations should lend a clue to their formation. Some are sectioned to show relation of internal to external structure.

Illustration 1. It is quite evident that two rolls of soft stone were squeezed together by the weight of overlaying strata, hardened and left as a spheroidal nodule. As this nodule became exposed to stream action, the later formed and softer body of the nodule was eroded away leaving the cruciform core as it now appears.

Illustration 2. The same causes brought about the same results to expose a sphere which had formed in a gas bubble. Sometimes four or five spheres would form in bubble cavities and then coalesce into a single nodule which in time would erode, setting free the circles and leaving behind

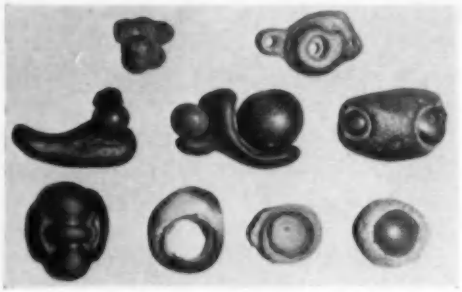


ILLUSTRATION 3

the binding stone. In Dahomey girl the neck and breasts are partially eroded spheres.

Illustration 3. In the group of forms illustrated, successive degrees of erosion discovered both the harder cores and the softer frames and, although they all follow a definite pattern of formation and subsequent erosion, no two are ever alike. Spheres and forms, discrete and united are to be found lying sparsely over the surface of the hills. I have gathered spheres and more bizarre forms which I will have for sale till they are all gone. Tumbled, some of them would take a high polish which might add to their attractiveness. So far as I know, nobody else has collected these stones.

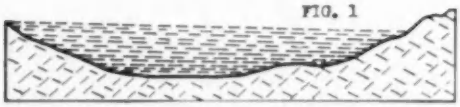
Geologic History of the Boulder Region

by ROBERT E. RIECKER

THIS STORY BEGINS hundreds of millions of years ago, in the remote time known to geologists as Pre-Cambrian, when the oldest rocks in the Boulder, Colorado, area were formed. An ancient sea (the shores of which are now unrecognizable) covered the entire region (Fig. 1). To this great

Progressive Development of Isostatic Sequence Shown in Figs. 1 to 9.

FIG. 1



epeiric sea or inland basin, streams from a land mass possibly to the west carried great quantities of sediment accumulating as layers of silt, sand, and limey mud. This sedimentary layer grew to a thickness of thousands of feet. Eventually this tremendous desposition drew to a close, after which far more spectacular events took place. In response to profound readjustment within the earth, the thick layer of sediments was wrinkled and bulged upward forming a mighty range of mountains. Huge masses of molten material from deep within the Earth worked their way upward toward the surface where great heat and quantities of gases from them, together with enormous pressures altered and metamorphosed the crumpled rocks into schists and gneisses (Fig. 2 & Fig. 3).

FIG. 2

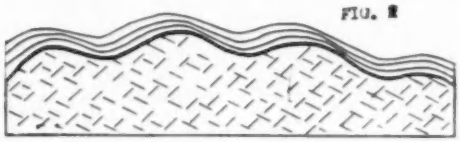
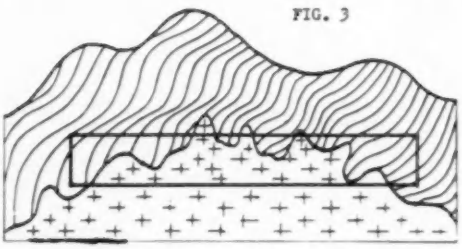
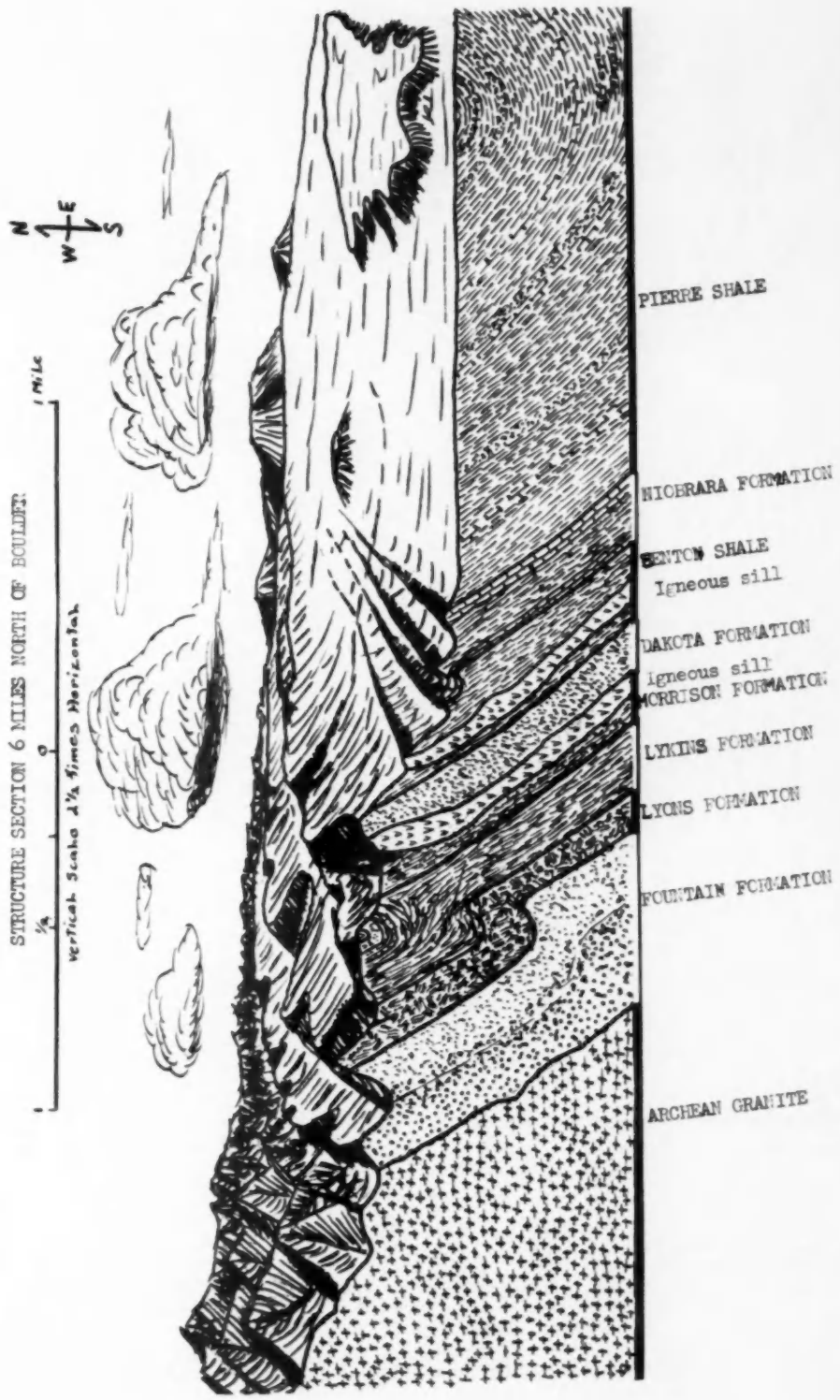


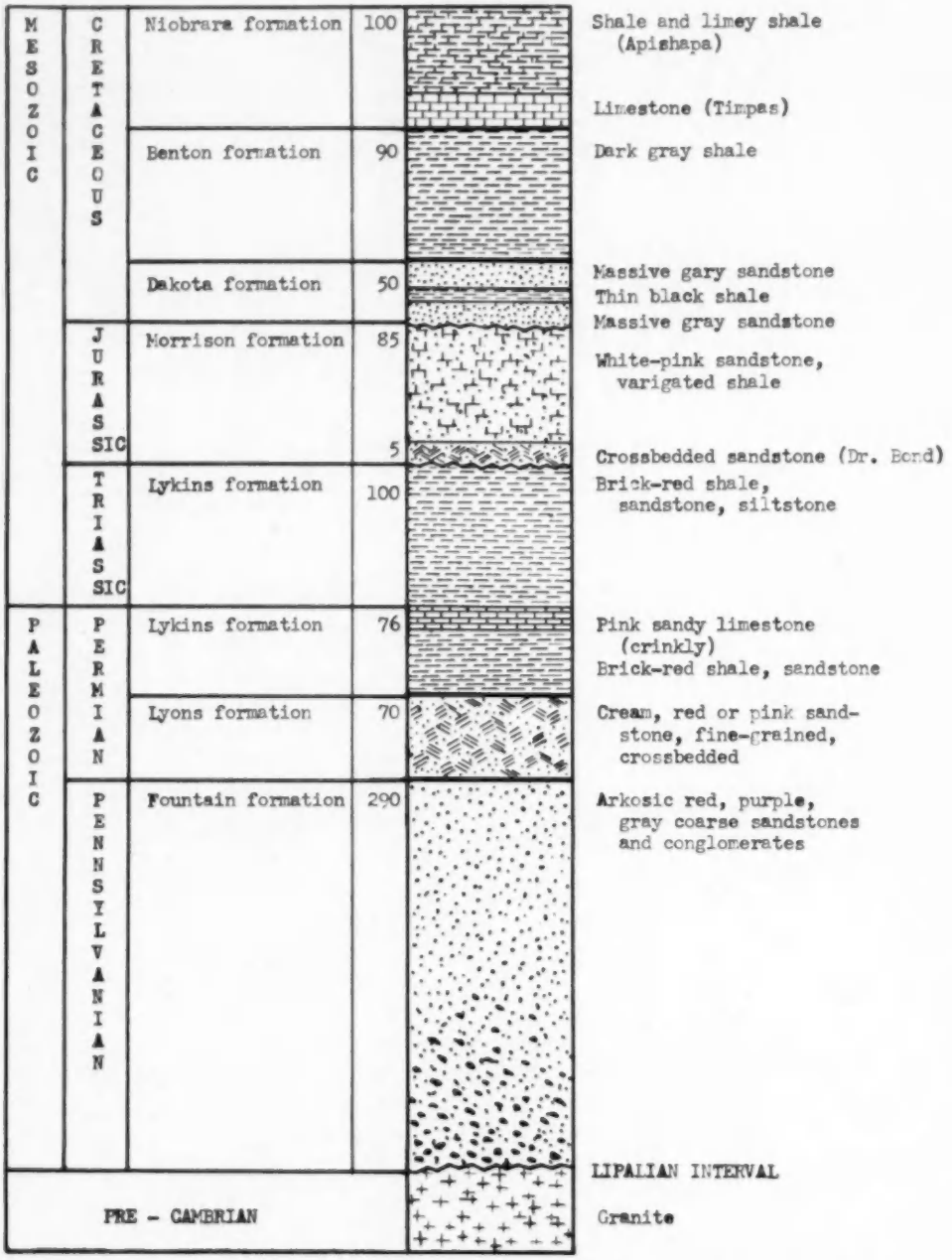
FIG. 3



Since the granite and seyenite, stocks and batholiths clearly cut and displaced the schists and quartzites, they are evidently younger than the intruded rocks. The whole great series of rocks appropriately may be called the Pre-Cambrian Complex.

Near Coal Creek about 5 miles south of the town of Boulder in the east foothills of the main range are considerable areas of quartzite, quartz-mica schists, and mica schists which are probably early Proterozoic in age. The Coal Creek formation is also probably the oldest

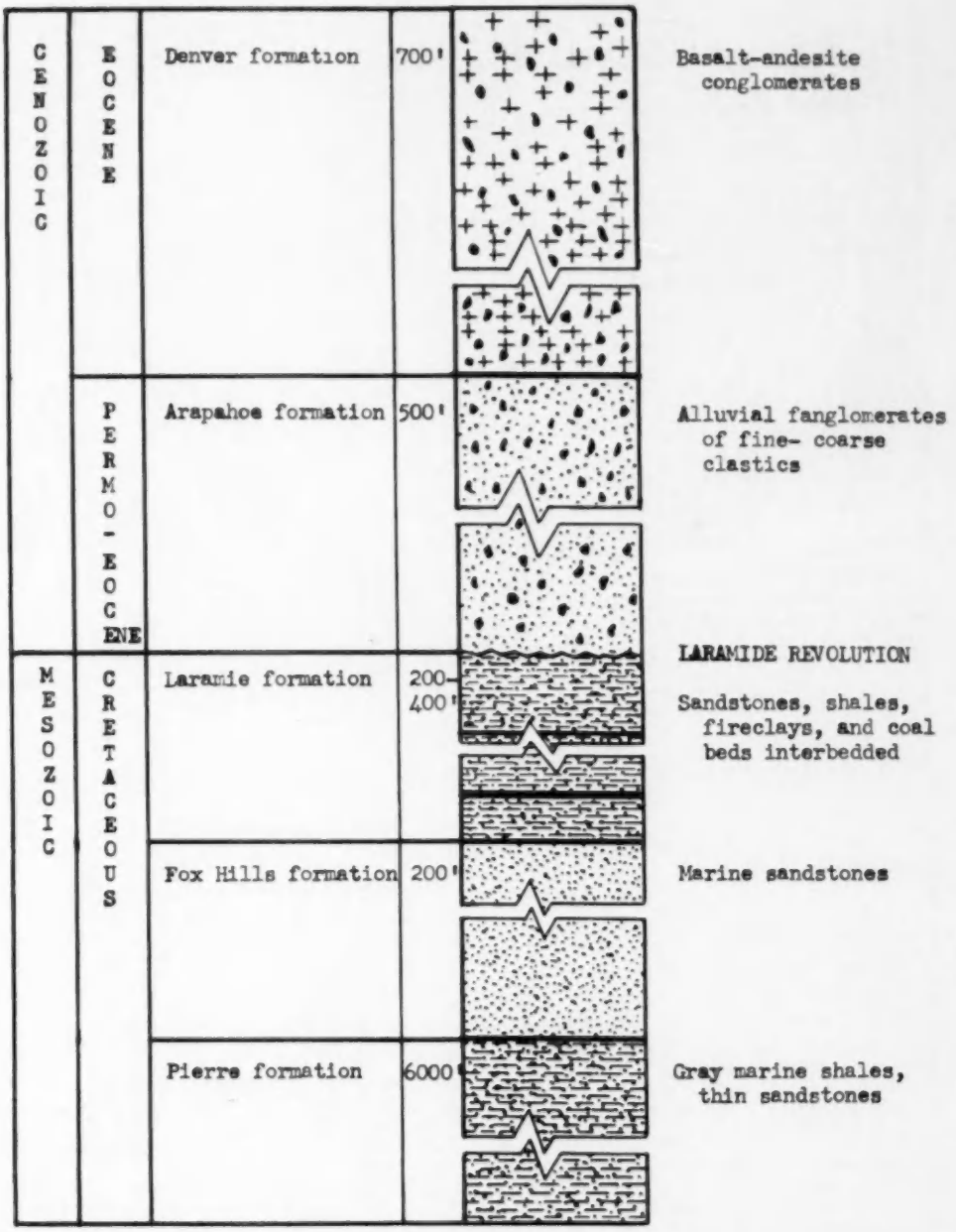

STRUCTURE SECTION 6 MILES NORTH OF BOULDER
N
W
E
S
1 Mile
0
Vertical Scale 2½ times Horizontal
PIERRE SHALE
NIOBRARA FORMATION
BENTON SHALE
Igneous sill
DAKOTA FORMATION
Igneous sill
MORRISON FORMATION
LYKINS FORMATION
LYONS FORMATION
FOUNTAIN FORMATION
ARCHEAN GRANITE



detectable unit in this area, composed chiefly of blue and grayish quartzite with red and brown iron stains. The original sandstone has lost most perceptible bedding planes and its deep burial is indicated by the numerous drag folds present in much of the area, while individual grains and pebbles have been flattened and elongated in the intense deformation. Two other joint sets, one parallel to the axis of the folding and the other perpendicular to it, run throughout this formation.

Associated with the Coal Creek formation, but noted for much more intense metamorphism, is the Idaho Springs formation composed chiefly of granite gneiss. Thickness of the original sediments of this formation has been determined as greater than 25,000 feet.

The simplest types of schist represent those



portions which have escaped the more severe metamorphism that characterizes large parts of the Idaho Springs formation. Injection gneiss is developed on a grand scale and some areas of the schist have been so thoroughly injected by granitic material that they appear to be granite gneiss. Exposed to view today, the Boulder Creek batholith (granite west of the city of Boulder) remains as a definite example of the intense intrusion. As granite forms at depths greater than 5,000 feet, the highly crystalline Boulder Creek intrusion indicates a vast covering of sediments.

Following the intense paroxysm, the forces of nature inexorably crumbled the rocks and carried them away, until finally the ancient mountain system was worn down to a vast plain (Fig. 4). Lesser mountains rose and were destroyed; great accumulations of sediment doubtless formed in places, rested for a time and

FIG. 4

eventually were removed by ceaselessly gnawing streams. This enormous degradation forms a hiatus in the record called the Lipalian interval, as if pages were torn from a book. A picture of the Colorado area of late pre-Cambrian time would be somewhat as follows: The surface would be low and undulating, the valley broad, the rivers sluggish- carrying only the lighest material. The rocks would be deeply weathered and decayed, thus ending the first section of the geologic record.

EARLY PALEOZOIC

During the early Paleozoic, the Boulder region seems to have been a lowland area as no record exists of any great deposition. If an arm of an inland sea did reach this area, its deposits were eroded soon after deposition. To the south, the Sawatch quartzite of upper-Cambrian age rests unconformably upon pre-Cambrian basement rocks. The Manitou limestone of lower Ordovician age unconformably overlies the Sawatch quartzite in the region of Colorado Springs, but it also is absent north of Castle Rock, Colorado. Overlying the Manitou limestone, mid-Ordovician Harding limestones complete the Eastern

Colorado record of Ordovician sedimentation. The Fremont limestone is unconformably overlain by a Mississippian limestone correlated to the Madison limestone of Wyoming. It lies beneath the Pennsylvania rocks, and is not found north of Castle Rock. Fossiliferous cherts found in later formations and in the loose gravel of the plains indicate that strata of Mississippian age were once widely distributed over this region. Their destruction however, before the deposition of post-Mississippian formations is complete in the Boulder, Colorado, region, as no remnant of such beds exists in the well-exposed sections along the foothills. A thick bed of Mississippian chert pebbles rests on granite at the base of the Fountain formation northwest of Fort Collins, however.

PENNSYLVANIAN

Sometimes in the Pennsylvanian period large fresh and brackish water lakes and bays covered much of this region, and in them and on their borders were deposited coarse sands and gravel from nearby highlands to the west, as indicated by the growing coarseness of sediments in that direction and the preservation of easily destructible feldspar grains in the arkosic conglomerates and sandstones of this, the Fountain formation (Fig. 5). Individual beds are lenticular, and

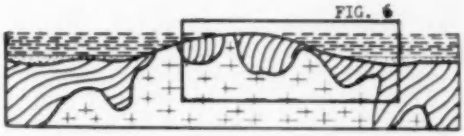
FIG. 5

cross-bedding is very common. The coarseness of the material and its reddish color suggest the rapid transportation of material under semi-arid conditions, and testify to active erosion in a bordering land mass. Great eastern thickness variation suggests alluvial fan and deltaic deposits. Nearly all of the clastic matter consists of pre-Cambrain rock, but some reworked fragments of Paleozoic formations are locally abundant and indicate uplift and erosion at the beginning of the Pennsylvanian period, even though no angular unconformity has been found.

PERMIAN

The conditions existing in the Pennsylvanian lasted into the Permian period, and it is difficult to separate the two series. It can be concluded however, that the amount of erosion separating the Fountain and Permian (Lyons formation) was very slight and that sedimentation was more or less continuous in the shallow offshore waters at the edge of the sea (Fig. 6). The Lyons for-

FIG. 6



mation consists of fine-grained, cross-bedded quartzose sandstone with siliceous cement and a

pinkish color due to iron oxides which penetrated the formation in post-Permian time. At Boulder, the Lyons forms the east side of the second hogback. Small uniform and well-sorted sand grains indicate deposition under beach conditions, while cross-bedding and sand bars with ripple marks complete this evidence.

TRIASSIC

Triassic time opened with a continuation of the same conditions which closed the Permian. However, the Lyons-Lykins contact is lithologically sharp and distinct where a small erosional disconformity represents a small time gap. Actually the Lykins formation is permo-Triassic up to a crinkly limestone member, while above it lie the true Triassic beds.

Because of its softness and position between resistant formations, the Lykins forms an almost continuous north-south strike valley between the first and second hogbacks of the foothills. The Lykins consists of soft sandstone and shale, with some calcareous bands, and one persistent bed of gypsum. One lower member, the aforementioned crinkly limestone, is crumpled and brecciated.

(To be concluded in next issue.)

Midwest Club News

BERNICE WIENRANK, *Club Editor*
4717 North Winthrop Avenue
Chicago 40, Illinois

MINNESOTA MINERAL CLUB, after putting on the greatest gem and mineral show ever held in the Midwest (the combined conventions of the American and Midwest Federations, held in the Twin Cities, July 12-15), relaxed by taking a trip to Rice Lake, Wisconsin, on August 12, to collect catlinite (pipestone). According to Indian accounts, this area once supplied pipestone to all the tribes in the Great Lakes region, prized above the more plentiful but plainer stone of western Minnesota. For several generations prior to 1850, the Chippewa Indians used it as one of their principal items of barter. Because of the ceremonial use of the pipes made of this stone, the Chippewa kept the location of this deposit secret from all but a half-dozen artisans, who quarried and carved there. In a battle with the Sioux these artisans were killed and the Indians never again found the site. There was a time when it was believed that western Minnesota actually was the source of the pipestone used by the Chippewa tribe prior to 1850. Research conducted by the Disney Studios, during the filming of the "Legend of Hiawatha," indicated that the Chippewa's ancient quarry was located in Barron County, Wis. It was then, about five years ago, that the outcropping of catlinite was rediscovered in the Blue Hills of Handscrabble near Rice Lake, Wisconsin.

*

ST. LOUIS MINERAL AND GEM SOCIETY recently enjoyed a picnic in the Rockwood Reser-

vation near St. Louis. Games were played, rocks swapped, and mineral and gem prizes awarded to the holders of lucky numbers. The picnickers also prospected the area for minerals and fossils.

*

CINCINNATI MINERAL SOCIETY recently heard Mr. B. G. De Weese, of the Union Central Life Insurance Company, speak on "Minerals and Insurance." The Union Central Life has been helping to develop the mineral resources of the United States since 1880. At present, for this purpose, it has 500,000 acres under lease. Lands producing oil and gas are its chief interest, but it also has leases on lands containing deposits of manganese, aluminum, coal, asphalt, uranium, sodium sulfate, granite and limestone.

*

EARTH SCIENCE CLUB OF NORTHERN ILLINOIS won the Midwest Federation's trophy award for the best society exhibit at the American and Midwest Federations' convention which was held in St. Paul, July 12-15. ESCONI's exhibit, a museum in miniature, featured wondrous Chinese jade vases and figures; artifacts and bones from the graves of early American Indians; plant and animal fossils displayed before illustrations of how they looked when alive; gems and jewelry, and miniature workshops containing tiny specimens of the minerals and fossils being studied by its junior members.

*

GEOLOGICAL SOCIETY OF MINNESOTA on August 12 visited the Devils Lake region near Baraboo, Wisconsin, to study its Huronian, Cambrian and Ordovician stratigraphy, glacial features and present physiography. Of particular interest to the group were Pewit's Nest, Natural Bridge and Anaker Hill at the east end of the syncline.

*

INDIANA GEOLOGY AND GEM SOCIETY made a field trip on August 12 to Weisburg, Indiana, to collect trilobites. Exposures and fossils in this area are the oldest in the state, more than 350,000,000 years old.

*

DES MOINES LAPIDARY CLUB has a rule that all committee members must be volunteers, none may be appointed. A project is dropped if no one offers to work on it. To date, the club has not had to abandon a single plan, instead it usually has an excess of volunteers for each committee. Gus Brown, Liaison Officer of DLC, states that this rule has resulted in enthusiastic participation in the club's activities by all of its members, and has prevented the formation of cliques.

*

AUSTIN GEM and MINERAL SOCIETY recently heard Halvor Stubetro, of the Nokomis Lapidary Shop of Minneapolis, speak on "Fluorescence." Mr. Stubetro also presented a beautiful display of fluorescent rocks.

*

MICHIGAN GEM AND MINERAL SOCIETY has a vacation map in the July issue of its bulletin, *Michigan Gem News*. MG&MS urges its members to mark the route of their vacation trips on the map and note any areas that provided good mineral hunting. It also suggests that its members write stories about their summer travels. Mr. and Mrs. G. Strange, editors of *Michigan Gem News*, plan to publish the maps and stories in later issues of the bulletin.

*

CHICAGO ROCKS AND MINERALS SOCIETY will hold a "campfire" meeting on September 8. Members of the club will hold a powwow around a simulated campfire for the purpose of telling about their summer rockhound experiences and to display their favorite specimens.

NEWS OF OTHER SOCIETIES

PASADENA LAPIDARY SOCIETY made a field trip on June 10 to Victorville, California, to collect verde antique, a lovely green-mottled, marble-type rock. At this location verde antique is found in chunks large enough to make book ends, paper weights, etc.

*

VERDUGO HILLS GEM AND MINERAL SOCIETY recently visited the site of an abandoned onyx mine in Pipes Canyon near Pioneer Town, California, where, in a short time, the group collected a large quantity of nice onyx and then held an impromptu picnic.

*

MINERALOGICAL SOCIETY OF ARIZONA on May 18 heard Jo Parsons discuss "Pyrophylite." This rare aluminum silicate is found in metamorphic rocks and is identical with talc in structure. It is amber colored and its crystals are flower-like. In China it is used for carving figurines, etc.

*

EASTERN FEDERATION OF MINERALOGICAL SOCIETIES will hold its Sixth Annual Convention and Gem and Mineral Show in Baltimore, Maryland, September 27-29, with post-convention field trips on Sunday, September 30. The Gem Cutters Guild of Baltimore will be host to the convention, which will be housed in the main ballroom of the Emerson Hotel. There will be lectures on the earth sciences, competitive displays by individuals and clubs, special non-competitive exhibits, and commercial booths. Members will be given souvenirs and the general public will receive door prizes.

*

WASATCH GEM SOCIETY on July 19 enjoyed a picnic meeting in Mill Creek Canyon, Utah. Games and rocks competed for attention.

*

SHAWNEE GEOLOGY AND ROCKHOUND CLUB will hold its fifth Annual Field Day in Gage Park in Topeka, Kansas, October 14, from 10 A.M. to 4 P.M. Guests are cordially invited and are urged to bring their "braggin'" and "swappin'" rocks. There will be plenty of room for exhibits. Bring a basket lunch, coffee will be on the house.

*

CLASSIFIED ADVERTISING

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IN THIS SPACE your ad for those Rocks, Minerals, Gems, Mountings, Books, etc., would be read by more than 2000 Readers. EARTH SCIENCE, Lock Box 1357, Chicago 90.

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QUARTZ CRYSTALS. Unusual specimens from several localities. Odd twinning and other features. Reasonable prices. On approval. CLAUDE D. SMITH, Box 291, Geneva, New York.

BETTER QUALITY TUMBLED GEMS of agate, tiger's-eye, quartz, woods, etc. Choice sizes, no waste. Half pound, $3.00, 10 pounds, $50.00 postpaid. LEE DEWING — ROCKCRAFT, 1923 Empire, Burbank 7, Calif.

COMPTON GEM AND MINERAL CLUB will hold its annual Gem and Mineral Show September 8-9, in the VFW Hall, 119 E. Magnolia, Compton, California. The theme of the show will be "Melodies in Gems." Some of the song titles which will be portrayed in gems are: "Deep Purple," "Pennies from Heaven," "Deep in the Heart of Texas," and "California Here I Come." Prizes will be awarded for the best displays.

*

EL PASO MINERAL AND GEM SOCIETY will feature a display of gems and minerals at the First Annual El Paso County Fair, to be held August 29 through September 3, in the Coliseum in El Paso, Texas. Many large and attractive collections will be placed on exhibit.

*

RAWLINS ROCKHOUNDS GEM AND MINERAL SOCIETY is conducting a series of lapidary classes for new and inexperienced members. The club meets on the second Tuesday of each month in the Community Room of the Rawlins Court House.

*

TRI-STATE ROCKHOUNDERS' GEM AND MINERAL SOCIETY was organized June 16 in Brasstown, N. C. Covering western North Carolina, north Georgia and east Tennessee, the club is located in the center of a region that is often referred to as "nature's sample ground" or a "collector's paradise." On July 16 it made a field trip to Towns and Rabun Counties, Georgia, where its members collected amethyst, gem quality rutile, colored gem quartz, ruby, and gold bearing ore.

RECOMMENDED READINGS

"Russian Jewels," by Virginia Stroh, July issue of *Evansville News Letter*.

*

"Italian Cameos," by Juanita Parsons, June issue of the *Template*.